

ABSTRACT

This invention provides a magnetic recording/reproducing apparatus with high storage capability and an areal recording density over 7.75 Gbits/cm², in which fluctuation of readback output and decay of magnetization or erasure of recorded magnetization in the recording layer are prevented. On the substrate of a magnetic disk, a soft magnetic underlayer and a perpendicular recording layer are formed in order, where the soft magnetic underlayer has a triple-layered structure in which a domain control layer including an anti-ferromagnetic layer is sandwiched between two first and second soft magnetic layers. Given that thickness of the first soft magnetic layer is d_1 and thickness of the second soft magnetic layer is d_2 , d_1 and d_2 should be between 25 nm and 150 nm and a ratio of d_1/d_2 should fall within a range of 0.3 to 1.5. Thereby, magnetic domains in the soft magnetic underlayer of a perpendicular magnetic recording medium are controlled and magnetic domain wall motion can be inhibited.